CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES
OF WILD FAUNA AND FLORA

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METHODOLOGY FOR DRAWING-UP NON-DETRIMENT FINDINGS FOR CITES SPECIES

This document has been submitted by Spain at the request of the Spanish Scientific Authority in relation to agenda item 10 on *Non-detriment findings*[*].

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METHODOLOGY FOR DRAWING UP NON-DETRIMENT FINDINGS FOR CITES SPECIES

(SPECIES OF ANNEX B OF THE REGULATION *338/1997*)

2017

Subdirección General de Medio Natural

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Front cover photo: *Python reticulatus*

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1. INTRODUCTION

International trade has been one of the main causes of population decline and even extinction for many wild species. For this reason, and aiming at regulating this trade, the CITES Convention was established. At the European Union level this Convention is applied through the Council Regulation (EC) No 338/97 of 9 December 1996 *on the protection of species of wild fauna and flora by controlling their trade*. To date, there are some challenges for its correct application, such as the availability of a standardized and objective methodology for the elaboration of non-detrimental findings (NDF) opinions, necessary for the issuance of permits for the export and import of specimens of species included in Annexes I and II of the Convention, and A and B of the Regulation (EC) No 338/97.

The elaboration and use of NDFs is justified in the text of the CITES Convention and Regulation (EC) 338/97, in which Articles 4 and 5 indicate that for the import or export of specimens of species included in Annexes A and B, it is a requirement, inter alia, that the Scientific Authority (of the importing Member State or the exporter, respectively) considers that the introduction (or export, where appropriate) will not be detrimental to the conservation status of the species. The positive or negative character of this assessment is the result of the analysis carried out through the NDF.

Ultimately, the NDFs must conclude whether the extraction of the specimens intended to be affected will affect the survival of their original population. At present, although NDFs are based on the export quotas established by the exporting countries, on trade statistics and, in some cases, on studies that underpin management plans, there are uncertainties and criticisms of them[1]; in some cases, extraction quotas are not based on scientific information on the conservation status of the population that may be exploited. Therefore, they may not be valid because they require directly measurable and verifiable variables that could be correlated with the conservation of the species.

There is a generalized interest by the Scientific Authorities in the establishment of an integrative and objective methodology for the elaboration of NDFs. In this regard, at least since the 2000s a number of variables have been proposed which should at least be assessed in the NDFs, and which have been included in the CITES Recommendations: for example, see, among others, the Guide for CITES Scientific Authorities (IUCN, 2002); CITES Resolution 16.7 (COP 2013); the document 'Non-detriment findings in CITES NDFs' (Rose, M., 2014); or the Guide for Scientific Authorities (SRG, 2017).

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[1] Auliya, M., García-Moreno, J. & Martel, A. (2016). The global amphibian trade flows through Europe: the need for enforcing and improving legislation. *Biodiversity and Conservation*, *25*(13), 2581-2595.
Auliya, M et al. (2016). Trade in live reptiles, its impact on wild populations, and the role of the European market. *Biological Conservation* 204, 103-119.

All of this justifies the use of a standardized methodology that collects and allows applying the previous proposals for the elaboration of the NDF, starting from that minimum list of variables proposed. In this context, the methodology set out in the present document makes it possible to apply two procedures: 1) a main procedure combining a purely quantitative approach, based on demographic models and a semi-quantitative assessment with a small number of variables, and 2) in the case that sufficient information is not available, a secondary procedure in which at least one of the two approaches is applied.

On the whole, both procedures contemplate all of the variables that have been recommended in analyses and guidelines mentioned above. In this way, the methodology presented here largely reduces the subjectivity that might exist until now in the development of the NDF, which in turn leads to a greater scientific robustness as it is based on a standardized and common methodology.

The development of this methodology has also been motivated by the recently adopted EU Action Plan against Illegal Trafficking (COM (2016) 87 final)[2], which establishes among its objectives to ensure a more uniform application of EU trade rules on the wildlife trade, through better enforcement and compliance monitoring by Member States. In this sense, the proposed methodology contributes to the implementation of the objectives of the EU Plan by focusing on a key issue (helping to determine whether or not the extraction of specimens from the wild for commercial purposes would affect the survival of wild populations) in order to prevent international trade of wild species or their derivatives from endangering the conservation of these species.

2. BACKGROUND

As indicated in the introduction, there are several documents developed to fulfill the request of the CITES parties for establishing guidelines for a standard methodology for the development of the NDFs. This also allows comparisons of the assessments made by the different CITES parties. All these documents are based on the IUCN Guidance for CITES Scientific Authorities (Rosser and Haywood, 2002)[3], which is the main reference for the development of NDFs, and has subsequently been expanded, revised and developed for different taxa.

In this sense, CITES Resolution Conf.16.7 (Rev. COP 17)[4] establishes the following not-limiting list of variables that can be included in the methodology of evaluation of NDF:

A. species biology and life-history traits;
B. species range (historical and current);
C. population structure, status and trend (in the harvested area, nationally and internationally);
D. threats;
E. historical and current species-specific levels and patterns of harvest and mortality (e.g. age, sex) from all sources combined;

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[2] http://ec.europa.eu/environment/cites/pdf/WAP_EN_WEB.PDF
[3] https://cites.unia.es/cites/file.php/1/files/CITES-guidance-prelims.pdf
[4] https://cites.org/sites/default/files/document/S-Res-16-07-R17.pdf

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F. management measures currently in place and proposed, including adaptive management strategies and consideration of levels of compliance;
G. population monitoring; and
H. conservation status.

For its part, the Scientific Review Group (SRG)[5] which regularly develops and updates the 'Scientific Authority Guidelines', recommends in the latest version of 2017[6] that NDFs might be based on Resolution Conf. 16.7 including, but not limited to, previous considerations, also adding the variable "Benefits for conservation from trade" as a new consideration.

The document 'Non-detriment findings in CITES (NDFs)' (Rose, M., 2014)[7] proposes the following five key indicators that should be included in all NDFs, including in those cases where the review is minimal:

- Plausibility of the provided data (accuracy and correctness)
- National distribution and abundance
- Management plan and quotas (taking into account the conservation status)
- Monitoring (method, areas covered and confidence in monitoring)
- Trade statistics (allows drawing conclusions on the dynamics of trade)

The methodology presented here reflects and integrates all the minimum parameters recommended according to the previous lists and is used by the Spanish CITES Scientific Authority for the elaboration of the opinions of NDF.

3. METHODOLOGY FOR THE ELABORATION OF NDF

3.1. Methodological principles

This methodology for the development of NDF has the dual purpose of: (1) to give objectivity to the decision-making process regarding the impact that the extraction of specimens may have on the survival of the population of origin; and (2) to have a tool that allows a rapid and standardized assessment of the impact on the donor population.

Based on the fact that a NDF is basically a risk assessment (the risk that the harvest of specimens for trade has a detrimental effect on the survival of a population), a methodology similar to those commonly applied to environmental risk assessments is used (e.g. environmental impact assessment of projects, introduction of invasive alien species, genetically modified organisms or

[5] Group of scientific assessment establish by the Regulation (CE) 338/97, in which all members states are represented through their Scientific Authority
http://ec.europa.eu/environment/cites/srg_en.htm
[6] http://ec.europa.eu/environment/cites/pdf/srg/guidelines.pdf
[7] https://cites.unia.es/cites/file.php/1/files/guide-CITES-NDFs-en.pdf

organisms for biological control). In this sense, the following considerations must be taken into account when drawing up the NDFs:

- Precautionary principle: the most beneficial option for the conservation of the population or species in the wild will be selected. Therefore, the most conservative option will be chosen in case of doubt or uncertainty when assessing the qualitative or quantitative status of the population of origin.

- The assessment will always be based on the use of data at the scale of the target population[8] (ie from which the individuals are extracted). In default, information corresponding to the national population of the species in the exporting country will be used,

- The NDF will be based on the best information available, published or not. According to the communication from the European Commission, COM (2000) 1 final, on the use of the precautionary principle, it corresponds to the public authorities or the user to demonstrate the absence of risk of a product or process - in this case, demonstrating the absence of risk that the harvest of specimens could cause on the conservation status of the population of origin-, being the tasks of obtaining and providing the precise information to evaluate the risk of extraction for the wild population an accountability of the user (producer, manufacturer or importer).

In this sense, Annex I contains a form which includes the fields of information used to enable the Scientific Authority to evaluate the effect of the extraction of specimens on the population of origin. For this reason, the user or importer, simultaneously with the submission of the application for the import permit, may voluntarily submit the information contained in Annex I, with reference to the scientific or official sources from which the information comes with a voluntary statement of the veracity of the information provided, in accordance with Annex II, which would speed up and facilitate the better elaboration of the NDFs.

The Scientific Authority of the importing country may, on the one hand, validate the information provided, on the basis of scientific criteria and, on the other hand, may gather the information of Annex I which has not been provided by the importer at the time of the request for permission, including, where appropriate, consultations with the SRG and the Scientific Authority of the exporting country, as well as experts and institutions relevant in the matter.

3.2. Scope of application

The methodology set out in this document is the one applied by the Spanish CITES Scientific Authority for the development of the NDFs related to trade (both import and export) of species of vertebrate fauna in Annex B of Regulation (EC) 338/97. The methodology will be applied in the judgement of the Scientific Authority both on specimens having a W origin (ie. trade of specimens extracted from the natural environment) and on those from captive breeding from any

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[8] El término población aparece definido en el Reglamento 338/97 como "*un conjunto de individuos, diferenciado biológica o geográficamente*".

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source (C, F or R origin codes)[9]. In the latter scenario, each combination species / breeding facility is evaluated in order to ensure that breeding activity does not adversely affect the survival of the wild population, for example, in the case of the extraction of founding specimens or for population reinforcement and renewal, as a possible source of origin and spread of diseases for the wild population, etc. In this sense, the need for the development of NDFs for the importation of specimens from breeding, ranching or captive breeding facilities has been highlighted in a recent communication[10] from the SRG addressed to all EU Scientific Administrations.

The elaboration of the corresponding NDF for the species of Annex B in general, is made for the first import request received for each species-population / exporting country combination. The opinion elaborated takes into account the view of the SRG and the actual or expected trade volume, and indicates its period of validity. As a general rule, the period of validity of a NDF for a species in Annex B will be one year from the date of issue, unless otherwise indicated in the opinion itself, or if the Scientific Authority considers there are changes in the conditions of trade or of the species. As long as the NDF has been positive and remains in force and there are no changes in the conditions, no new NDF is needed for the same species-population / exporting country combination, although this scientific authority periodically examines the volume of imports or exports of the species involved in case it is necessary to reassess the situation and re-evaluate the NDF.

With regard to the introduction of specimens of species in Annex A, Article 4.1 of Regulation (EC) No 338/97 states that it must respond to scientific, educational or captive-breeding purposes or other purposes not detrimental to the survival of a given population or species. Given the need to assess the fulfillment of these purposes for the importation of Annex A specimens, it is not necessary to apply this methodology, although it can be used as a guide for the assessment and to form an opinion. In any case, the importation of specimens from Annex A is evaluated on a case-by-case basis, depending on the purpose justifying their importation.

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[9] https://cites.org/sites/default/files/document/S-Res-12-03-R17.pdf
[10] Ref. Ares(2017)1832311 - 05/04/2017

3.3. Methodology

In order to reduce subjectivity in the process of elaboration and decision-making in NDFs, the method involves two procedures: a main one in which the Scientific Authority has most of the information necessary to evaluate the impact of harvesting on the population, and a secondary or alternative, in which only partial information is available. The **main procedure** combines a purely quantitative approach, based on a population viability analysis, with a semi quantitative approach, based on the valuation of a defined series of variables. The analysis derived from the population model will have greater weight in the determination of the NDF than the semi quantitative analysis. In the secondary or alternative procedure, at least one of the two approaches, quantitative model or semi quantitative analysis, will be applied depending on the available information. The characteristics of both procedures and how they are applied, as well as the interpretation of the results obtained, depending on whether they are part of the main or secondary procedure mentioned above, are described below:

3.3.1) <u>Quantitative approach: statistic model application based on Population Viability Analysis</u> (PVA)

A population viability model estimates the survival probability of a population over the years, taking into consideration their growth and extraction rates. The model is based on an interface in R[11] (computer program and programming language with great statistical robustness) that simplifies different methodologies[12,13,14,15], can use either time series of counts of the population size (optimal) or demographic parameters, both referring to the population under study.

To use a time series of counts, it is necessary to count optimally with population estimates of at least the last five consecutive years, and at least with **population estimates from the last three years**. To work with demographic parameters, **the current population size, harvest levels (number of individuals removed), and annual birth (i.e. productivity, breeding success, recruitment, etc) and natural mortality rates** to which the exploited population is subjected must be integrated to the model. Ideally, birth and natural mortality rates should come from the population of origin, but if not available rates from other populations of the same or related species may be used.

The harvesting rate will correspond to the annual quota of extraction adopted for the species-population by the exporting country. In this case, in order to take this quota into account, it must first be ensured that it complies with the requirements

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[11] The R Development Core Team. 2017. R: A language and environment for statistical computing. R Foundation for Statistical Computing. Vienna, Austria: R foundation for statistical computing. https://www.r-project.org/

[12] Stubben, C.J. and Milligan, B.G. 2007. Estimating and Analyzing Demographic Models Using the popbio Package in R. Journal of Statistical Software 22:11. http://www.jstatsoft.org/v22/i11

[13] McGowan, Conor P.; Runge, Michael C.; and Larson, Michael A., Incorporating parametric uncertainty into population viability analysis models. 2011. USGS Staff -- Published Research. Paper 554. http://digitalcommons.unl.edu/usgsstaffpub/554

[14] Palazón, JA. 2012. Análisis de Viabilidad Poblacional. Máster en gestión de la biodiversidad en ambientes mediterráneos. Universidad de Murcia.

[15] Martin C.A. 2016. msPVA: An R implementation of count-based multi-site population viability analysis. R package version 0.0.0.9005: https://github.com/cmartin/msPVA

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for export quotas set out in CITES Resolution Conf.14.7 (Rev. CoP15) [16]. In cases where the species-population / exporting country combination has not fixed a quota, the average number of exports during the last decade may be used. In any case, the population size and the extraction quota should refer to the same geographical area, preferably the target population (local scale) or, failing that, the whole population of the exporting country.

The model design incorporates the basic calculation methodologies of Stubben & Milligan (2007)[12], McGowan et al. (2011)[13], Palazón (2012)[14] and Martin (2016)[15]. As for the technical parameters of the model, the quasi-extinction threshold is set at 500 individuals, and 100,000 simulations are performed (standardized conditions). When inserted data came from population counts, the model generates a population growth rate (λ, lambda), which will be positive if λ>1, and negative if λ <1. However, the model can only calculate the standard deviation (σ) of λ, which represents demographic stochasticity for a set of years, if the time series available is equal to or greater than 5 years. If, on the other hand, the model is based on demographic parameters, the the growth rate (λ) is directly derived from them and included into the model. In this case, an estimate of lambda can be made through a simplification and assuming that $\lambda = R_o$ (that is, the growth rate is equivalent to the net reproductive growth rate, or in other words, the annual number of females that survive from each female of the population), and is calculated as:

$$R_0 = l_x b_x$$

Where:

b_x is the number of born females
l_x is the survival rate

The model informs if the population enters the *extinction risk*, which will be determined by the value of the upper limit of the confidence interval of the probability of extinction. In the absence of this value (for time series shorter than 5 years), the average value of the extinction probability is taken instead. The threshold to consider whether the harvesting to which a population is subjected may be detrimental to survival is set at an extinction probability value of 5% in 50 years. Values above this threshold indicate that the population enters the *extinction risk*, which could lead to population collapse. Consequently the result of the quantitative approximation will be negative (-). Conversely, when the extinction probability of the model is below the thresholds (i.e., population stability or increase), the result of the quantitative evaluation is positive (+).

Any extinction probability value greater than 0 is undesirable, regardless of the time frame: it is indicative that the current haversting level is unsustainable. However, as a precautionary measure against the potential case that estimates on extinction probability are due to chance (e.g., in the face of reduced time series), a possible error in the estimate of ± 5% has been assumed. In this way the established threshold (p> 5%) is justified, based on a probability of extinction

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[16] https://cites.org/sites/default/files/document/S-Res-14-07-R15.pdf

greater than 0 + 5% of error. In summary, estimates of the extinction probability between 0 and 5%, could be due to chance, and are not considered as *extinction risk* finally.

This value of 5% (or *alpha* type error) has been taken as threshold since an error of this magnitude, in the positive or negative sense, can be the maximum acceptable in the estimation accuracy. This value is usually applied in the field of statistics and represents the widely accepted probability that an event (extinction of the population, in this case) is due exclusively to chance.

On the other hand, for practical and conservation purposes, it is considered appropriate to limit the period of time in which the commercial harvesting rate would be unsustainable if the established threshold is reached. To this end, the criteria for the 'Vulnerable' category have been selected according to the threat categories established by IUCN (2001, v3.1)[17], and the time range corresponding to a threshold of extinction probability of 5% has been proportionally adjusted. Thus, the model does not work with an extinction probability of 10% in 100 years, as IUCN states for the category of 'Vulnerable', but with an extinction probability of 5% in 50 years. The category of 'Vulnerable' constitutes the first level in which a species is considered threatened, so that the precautionary principle is required.

Finally, it should be pointed out that the model developed is essentially based on three of the eight considerations established by the Scientific Review Group through the "Scientific Authority Guidelines", in particular 1, 2 and 3 (see section 3).

3.3.2) Semiquantitative approach

The semiquantitative evaluation focuses on the analysis of a number of variables, which differ slightly depending on whether the evaluation is performed as part of the main or the alternative procedure. In the main procedure nine variables are analyzed, so that all the considerations of the Scientific Review Group mentioned in section 3 (except for the three already contemplated in the demographic model discussed above) are assessed through the semi quantitative approach. In the secondary procedure, the number of variables to be analyzed amounts to 11, since it incorporates the evaluation of certain variables in the model that are evaluated at a semiquantitative level. In both cases the variables are grouped into three main questions that evaluate the conservation status of the population of origin and the impact that the harvesting of specimens can have on the wild population:

- Biological characteristics
- Threats and conservation status
- Management and control for its conservation and exploitation

The evaluation matrix of the non-detriment finding (Annex III) collects the 11 proposed variables (with an indication of the three that are not required if the main procedure is followed), together with a series of possible responses for each, among which only one should be chosen. The responses are ordered according

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[17] https://portals.iucn.org/library/efiles/documents/RL-2001-001-2nd-Es.pdf

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to an increasing degree of natural vulnerability or risk of the population / species as a consequence of the extraction, which is also reflected in the associated value. It is very important to note that each response must be justified by the corresponding source of information (e.g. scientific publications, technical reports, unpublished reports, etc.). It should be highlighted that lack of knowledge or a high degree of uncertainty about the state and / or management of a population will lead the Scientific Authority to conclude that there is insufficient information on which to base a NDF and, consequently, the opinion will be negative until there is alternative satisfactory information with a minimum quality. This principle is consequently reflected in the scoring associated with the unknown responses, according to the column in Annex III. After evaluating all the variables, each scores obtained will be summed. The resulting value will be matched against the set threshold. So the greater the sum of recorded scores, the greater the damage that the extraction for trade causes on the population of origin.

The highest score that could be obtained by the complete application (11 variables) in the table in Annex III are 33 points. Thus, the mean value (16.5) has been considered as the threshold for determining the sign of the evaluation of the semi quantitative analysis. Following the same approach, for the application of the table as part of the main procedure (8 variables), a threshold of 13 points (<13 positive NDF, ≥13 negative NDF) is established.

If the IUCN Red List (http://www.iucnredlist.org/) does not include an assessment sheet for the conservation status of the species (variable 6 in the table), the assessment of this variable shall be omitted, and the threshold is readjusted accordingly, being established in 16 points, and 11 points, respectively, depending on whether the 11 or only 8 variables are being evaluated.

Three different outcomes of the NDF assessment are set from the established thresholds (Table 1):

- Assessments values higher that the referred thresholds plus 1, would obtain a **negative NDF.**

- Assessment values lower than the referred thresholds minus 1, would obtain a **positive NDF**.

- For assessments which scores fall within the range established by the threshold ± 1, it is not possible to guarantee that the harvest will not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species, and therefore the assessment corresponds to a "**Decision deferred**". As a result, this Scientific Authority will propose to the SRG a "No opinion ii", as defined in the 'Duties of the CITES Authorities and SRG under Regulations 338/97 and 865/2006'[6]. This "Decision deferred" would equally applies to any other import request for the same species / country combination during the following year from the

date of issuance of the first "Decision deferred". After one year, this Decision will be reassessed by this Scientific Authority in the light of the new data possibly received in this period. Only two possible outcomes could be obtained from the reassessment (Table 2): scores lower than the thresholds set above, will determine a positive NDF that will be communicated to the SRG; on the contrary, scores higher than the threshold will derive into a negative NDF, which will be the base of a proposal from this Scientific Authority to the SRG to form a negative opinion.

	11 variables			8 variables		
	(Secondary procedure)			(Main procedure)		
	NDF +	Decision deferred	NDF -	NDF +	Decision deferred	NDF -
Conventional implementation	< 16	16,17,18	> 18	< 12	12,13,14	> 14
Without IUCN assessment	< 15	15,16,17	> 17	< 10	10,11,12	> 12

Table 1: Thresholds for determining the results of the <u>assessment</u> of the Non Detrimental Finding:
Positive NDF(+): harvest does not affect the survival of the population of origin;
Negative NDF(-): harvest harms the survival of the population of origin;
Decision deferred: it is not possible to guarantee that the harvest will not have a harmful effect on the population of origen. The decision will be reassessed in one year on the basis of new information available to determine whether harvest is harmful or not.

	11 variables		8 variables	
	(Secondary procedure)		(Main procedure)	
	NDF +	NDF -	NDF +	NDF -
Conventional implementation	< 17	≥ 17	< 13	≥ 13
Without IUCN assessment	< 16	≥ 16	< 11	≥ 11

Table 2: Thresholds for determining the results of the <u>reassessment</u> of the NDF:
Positive NDF(+): harvest does not affect the survival of the population of origin;
Negative NDF(-): harvest harms the survival of the population of origin;

3.3.3) <u>Interpretation of results</u>

a) As mentioned above, both approaches (quantitative and semi-quantitative) are addressed in the main procedure, although the quantitative approach is given more weight. In this way, the Scientific Authority will consider that a NDF is positive if both approaches have obtained a positive assessment, or if only the quantitative approach, based on the population viability model, has obtained a positive assessment. Any other combination will result in the consideration that the extraction negatively affects the survival of the population and, as a result, the NDF is negative.

b) In the secondary or alternative procedure, at least one of the two approaches (quantitative or semi quantitative) is applied, which must have obtained a positive assessment, according to the methodology developed in the previous sections, for the Scientific Authority to grant a NDF positive.

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ANNEX I
Summary of the information needed to prepare a NDF

Quantitative approach (PVA)		Semi quantitative approach[2]
Based on a time series of counts[1]	Base on demographic parameters[1]	Based in 11[3] variables showed in annex III
• Population counts or estimates of at least three years	• Current population census or estimate • Birth rates (productivity, breeding success...) • Natural mortality rate • Extraction/harvesting rate (annual quota, or, failing this, average of the last decade's extractions)	• Abundance • Biological traits • Proportion representing the range of the species in the country, in relation to the global range • How is the species distributed nationally? • Last years population trend[4] • UICN conservation status[4] • Number of threats to the population of origin [4] • Percentage of distribution or population size included in protected or regulated areas [4] • Existence of management plan or equivalent for the conservation and sustainability of the resource [4] • Existence of mechanisms to control the extraction and monitoring of the state of the resource • Existence of social or species benefits derived from trade

[1] Only information contained in one of these two columns is used.
[2] Here we present only a summary of the variables included in the semi-quantitative evaluation carried out by the Scientific Authority to complete Annex II.
[3] The first three variables do not need to be assessed in the case of applying the semi-quantitative approach as part of the main procedure.
[4] Information regarding the population harvested. Failing this, it will refer to the population at the national level in the exporting country.

ANEX II
Voluntary statement of the truthfulness of the information provided

1. Applicant/Importer.

I acknowledge the veracity of the information provided to the Scientific Authority for the elaboration of the corresponding Non Detrimental Finding opinion.

Signed: _____ Date: _____

2. Representative (when applicable).

I acknowledge the veracity of the information provided to the Scientific Authority for the elaboration of the corresponding Non Detrimental Finding opinion.

Signed:_____ Date:_____

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ANEX III
Information used for semi quantitative evaluation

	Biological characteristics		S	V	Source
1*	Abundance[a]	Very abundant	0		
		Common	1		
		Uncommon	2		
		Very scarce or unknown	3		
	Remarks:				
2*	Biological traits	High reproductive rate, long-lived	0		
		High reproductive rate, short-lived	1		
		Low reproductive rate, long-lived	2		
		Low reproductive rate, short-lived; or unknown	3		
	Remarks:				
3*	Percentage of range of the species in the country relative to the range of the species in the world	< 10 %	0		
		10-40 %	1		
		40-80%	2		
		>80% or unknown	3		
	Remarks:				
4	Distribution pattern at national level	Widespread and continuous distribution; or ≥ 75% of the national territory	0		
		Widespread and fragmented distribution; or between 75% and 40% of the national territory	1		
		Restricted and fragmented distribution; or between 40% and 15% of the national territory	2		
		Localized distribution; or ≤ 15% of the national territory; or unknown	3		
	Remarks:				
	Threats and conservation status		S	V	Source
5	Population trend in recent years, preferably at the scale of the population from which the specimens will be extracted[b]	Positive	0		
		Stable	1		
		Unknown	2		
		Negative	3		
	Remarks:				
6	Conservation status according to IUCN, preferably at the scale of the	N/A (it is not VU, EN, CR or DD)	0		

	population from which the specimens will be extracted, if not at the country or globally[c]	VU (Vulnerable)	1		
		EN (Endangered)	2		
		CR (Critically endangered) o DD (Insufficient data)	3		
	Remarks:				
7	Threats to the population from which the specimens will be extracted: - habitat loss and fragmentation (e.g. change of land use, infrastructures, fires, water abstractions…) - pollution (including chemical, acoustic pollution and vibrations) - resource utilization or exploitation for purposes other than international trade (e.g. hunting, fishing, recolection, poaching, ilegal trade, comestic consumption...) - antagonism with other species (e.g. invasive exotic species, genetically modified organisms, desease, predation, herbivorism...) - reduced fecundity and genetic variability because of too low population numbers	No threats	0		
		1 out of the 5 types of threat listed	1		
		2 out of the 5 types of threat listed	2		
		≥ 3 out of the 5 types of threat listed (or without information on threats)	3		
	Remarks:				
	Management and control for its conservation and use		**S**	**V**	**Source**
8	Percentage of population distribution or size (locally exploited or nationally, in default) included in protected natural areas or regulated areas (including those regulated for extractive purposes) [d]	> 15%	0		
		15-5%	1		
		< 5%	2		
		0% or unknown	3		
	Remarks:				
9	Existence and implementation of a management plan or equivalent for the conservation and sustainable use of the resource	There is a plan and it is fully implemented	0		
		There is a plan and it is partially implemented	1		
		There is a plan but no evidence that it is being implemented	2		
		There is not a plan	3		
	Remarks:				
10	Existence of mechanisms to control extractions (both for	Administrative and *in situ* mechanisms exist	0		

MINISTERIO
DE AGRICULTURA Y PESCA,
ALIMENTACIÓN Y MEDIO AMBIENTE

DIRECCIÓN GENERAL DE
CALIDAD Y EVALUACIÓN
AMBIENTAL Y MEDIO NATURAL

	international or domestic trade) and to monitor the state of the resource in the area where the extraction takes place[e]	There are *in situ* mechanisms but not administrative ones	1		
		There are administrative mechanisms but not *in situ* ones	2		
		There are no control mechanisms	3		
	Remarks:				
11	Is it contemplated in any instrument (species action plan, normative provision) or other mechanism (local actions, projects, taxes) that a percentage of the economic benefits obtained from the extraction for trade turn in favor of the conservation of the species exploited and / or the local community?	There is an instrument and it is fully implemented	0		
		There is an instrument and it is partially implemented	1		
		There is an instrument but no evidence that it is being implemented	2		
		No; or it is unknown	3		
	Remarks:				
SUM of SCORES					

Semiquantitative evaluation matrix. The values in column S correspond to the score of each one of the answers that is offered for each of the variables that need to be evaluated. A unique response per variable should be marked next to the corresponding value in column V. The sum of the scores is entered in the lower row of the table. Each answer has to be justified in the "Source" column.

* The first three variables are not evaluated when the semiquantitative analysis is performed as part of the main evaluation procedure.

a) If there is no estimate of abundance, but at least one author has estimated the abundance qualitatively in the last years, the author's opinion will be used taken into account the extraction quota of the last years as an indicator to assign one of the abundance categories.

b) Capture rates or export levels can not be considered as indicators of the population trend if they are not associated with data on capture effort.

c) If there is no assessment of the conservation status in the IUCN Red List, this variable shall be omitted and the threshold for the determination of the sense of the NDF readjusted as indicated in the text.

d) The percentage and shape of the distribution of protected terrestrial areas for each country can be obtained from https://www.protectedplanet.net/c/unep-regions. If the distribution of the species is known, a mapping overlap may be carried out to determine the percentage of the distribution of the species contained in protected areas.

e) The existence of export quotas and of a registry of licenses for hunters / trappers / collectors of the natural resource are considered, amongst others, administrative mechanisms.